

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 09-263884

(43)Date of publication of application : 07.10.1997

(51)Int.Cl.

C22C 38/00
C22C 38/54

(21)Application number : 08-074523

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(22)Date of filing : 28.03.1996

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(54) HIGH STRENGTH HOT ROLLED STEEL PLATE EXCELLENT IN PITTING CORROSION RESISTANCE AND CRUSHING RESISTANCE, HIGH STRENGTH GALVANIZED STEEL PLATE, AND THEIR PRODUCTION

(57)Abstract:

PROBLEM TO BE SOLVED: To obtain the steel plate without causing the problems in P- and Cu-added steels by forming a steel stock of a specific chemical composition into steel plate while specifying respective condition of hot rolling and cooling.

SOLUTION: A stoichi steel, having a composition consisting of, by mass, 0.05-0.25% C, 1.0-3.0% Mn, 0.01-0.12% P, 0.02-0.5% Ti, 0.01-0.1% Al, S and N in the amounts controlled to $\leq 0.01\%$ and $\leq 0.01\%$, respectively, and the balance Fe, is hot-rolled at $\geq 800^\circ\text{C}$ finishing temp., and the resultant steel plate is cooled down to $\leq 650^\circ\text{C}$ at $\geq 30^\circ\text{C/sec}$ average cooling rate and coiled. By this procedure, the high strength hot rolled steel plate, in which the amount of solid solution Ti is regulated to 0.001-0.25% and which has a structure consisting of $\leq 15\text{vol.}\%$ ferrite and the balance one or ≥ 2 kinds among martensite, tempered martensite, and bainitic low-temp. transformed structure and also has 2500N/mm^2 tensile strength and excellent pitting corrosion resistance and crushing characteristic, can be obtained. Various treatments of electrogalvanizing, hot dip galvanizing, etc., are applied to the surface of this steel plate.